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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,628	01/10/2002	Joseph C. Rapuano	17561-069	8607

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EXAMINER

GOFF II, JOHN L

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 06/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/044,628

Applicant(s)

RAPUANO ET AL.

Examiner

John L. Goff

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-21 and 23-25 is/are rejected.
- 7) ☒ Claim(s) 10 and 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This action is in response to the amendment received 3/31/04.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Specification***

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Claim 1 requires forming a lay-up comprising placing a layer of protective-carrier sheeting between two layers of conductive-foil followed by covering each of the conductive-foil layers with a dielectric layer. Claim 1 further requires stacking a plurality of the lay-ups to form a book. It is noted that while claim 1 is an original claim disclosing forming a book from a plurality of lay-ups wherein adjacent dielectric layers of each lay-up meet, e.g. two stacked lay-ups comprise dielectric-foil-carrier-foil-dielectric-dielectric-foil-carrier-foil-dielectric, it is unclear where in the specification this embodiment is disclosed.

### ***Claim Rejections - 35 USC § 102***

4. Claims 13, 14, 17-20, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Maeda et al. (U.S. Patent 5,853,528).

Maeda et al. disclose a method for producing a plurality of circuit boards in a single pressing step wherein each circuit board lay-up is separated by protective-carrier sheets. Maeda

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et al. teach forming (without bonding) a circuit board lay-up comprising providing a first conductive-foil (e.g. copper foil) layer extended from a first conductive-foil roll, placing a dielectric layer (e.g. prepreg) on the first conductive-foil layer, covering the dielectric layer with a second conductive-foil layer extended from a second conductive-foil roll, and covering the second conductive-foil layer with a cut layer of protective-carrier sheeting (e.g. aluminum) (Column 1, lines 19-23 and Column 2, lines 65-67 and Column 3, lines 1-9 and Column 9, lines 24-27, 32-34, 46, and 66-67 and Column 10, lines 1-7 and Column 11, lines 38-39 and 42-53). Maeda et al. further teach assembling a plurality of the lay-ups into a book and pressing the book in a press to form a plurality of circuit boards (Column 11, lines 66-67 and Column 12, lines 1-2).

***Claim Rejections - 35 USC § 102/103***

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1, 2, 5-7, and 25 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Vomberg (U.S. Patent 6,158,492).

Vomberg discloses a method for producing a plurality of circuit boards in a single pressing step wherein each circuit board lay-up is separated by protective-carrier sheets. Vomberg teaches forming (without bonding) a circuit board lay-up comprising providing a cut protective-carrier sheet, sandwiching the protective-carrier sheet between two layers of conductive-foil (e.g. copper foil) extended from conductive-foil rolls, cutting each layer of conductive-foil to separate the conductive-foil layer from the conductive-foil roll, and covering at least one of the conductive-foil layers with a dielectric layer (e.g. prepreg) (Column 1, lines 14-16 and 38-40 and Column 3, lines 20-28 and Column 4, lines 10-30). Vomberg further teaches assembling a plurality of the lay-ups into a book and pressing the book in a press to form a plurality of circuit boards (Column 3, lines 28-29 and 61-64). It is noted Vomberg does not specifically recite covering both of the conductive-foil layers with a dielectric layer. However, Vomberg teaches "A gripper carriage 15b connected to the gripper carriage 15a takes one core plate 1 **or set of core plates 1** at a time from a transfer station 16 associated with the core-plate conveyor 4 and deposits the core plate 1 **or set of core plates 1 on the covered press plate 2.**" Thus, it appears when Vomberg suggests placing a set of core plates, i.e. dielectric layers, on the covered press plate, i.e. the conductive-foil covered protective-carrier sheets, that it is intrinsic to Vomberg that both sides of the covered press plate are covered with core plates. In any event, it would have been obvious to one of ordinary skill in the art at the time the invention was made to cover one or both of the conductive-foils layers taught by Vomberg with dielectric layers

depending upon the desired properties of the product produced, e.g. thickness, as only the expected results would be achieved.

***Claim Rejections - 35 USC § 103***

7. Claims 3, 4, 8, 9, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vomberg as applied to claims 1, 2, 5-7, and 25 above, and further in view of Pedretti (WO 00/16596).

Vomberg as applied above teaches all of the limitations of claims 3, 4, 8, 9, 11, and 12 except for a specific teaching of the material for the protective-carrier sheets. However, Vomberg is not limited to any particular material, and it would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the protective-carrier sheets taught by Vomberg any well known and conventional material such as aluminum as aluminum protective-carrier sheets were well-known in the art as less complex and costly protective-carrier sheeting as shown for example by Pedretti.

Pedretti is exemplary of well known and conventional aluminum protective-carrier sheeting in the same art and for the same use as in Vomberg wherein the aluminum sheeting is supplied to the process on a roll having a thickness of 0.2-0.8 mm having the advantage of being less complex and costly than other protective-carrier sheet materials (Figure 1 and Page 2, lines 2-3 and Page 7, lines 3-5). It is noted the method of Pedretti bonds the aluminum protective-carrier sheeting to the conductive-foil layers. However, Pedretti is cited only for its showing of the well known technique of using aluminum protective sheeting supplied to the process on a roll

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having the claimed thickness, and the primary reference Vomberg shows placing the conductive-foil layers on protective-carrier sheeting without bonding.

8. Claims 15, 16, 21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda et al. as applied to claims 13, 14, 17-20, and 24 above, and further in view of Pedretti (Pedretti is described in full detail above).

Maeda et al. as applied above teaches all of the limitations of claims 15, 16, 21, and 23 except for a specific teaching of the particulars of the aluminum protective-carrier sheets, e.g. how the sheets are supplied and their thickness. However, Maeda et al. are not limited to any particular thickness or supplying method, and it would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the protective-carrier sheets taught by Maeda et al. any well known and conventional aluminum protective-carrier sheets such as those shown for example by Pedretti as only the expected results would be achieved as Pedretti is from the same art as Maeda et al.

***Allowable Subject Matter***

9. Claims 10 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach or suggest a method for producing a printed wiring board including the steps of providing a conductive-foil layer and a protective-carrier sheet from the

same roll wherein the conductive-foil layer and protective-carrier sheet are not "bonded", i.e. attached in any way.

### ***Response to Arguments***

11. Applicant's arguments with respect to claims 1-9, 11-21, and 23-25 have been considered but are moot in view of the new ground(s) of rejection. It is noted amended claim 1 now excludes any bonding of the conductive-foil layers, protective-carrier sheeting, or dielectric layer prior to pressing such that all previous rejections are withdrawn and new rejections are made above.

### ***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.



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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **(571) 272-1216**. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John L. Goff  
June 17, 2004



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